



# Connecticut Distributed Generated Interconnection Working Group Meeting Summary

## **State of Connecticut Public Utilities Regulatory Authority Office of Education, Outreach & Enforcement**

### **Meeting Topics: EDC plans for trough-type connections and MSAs**

*\*\*Combined meeting summary: Monday, March 4, 2024 and April 9, 2024\*\**

### **Context**

For several months, the IX WG has been working with the EDCs to address PURA Orders related to trough-type connections and meter socket adaptors (MSAs) through ongoing discussions. A summary of the PURA orders related to these two topics and other important context related to the orders is provided below.

During the March 4<sup>th</sup> IX WG meeting, the EDCs provided a high-level presentation on the status of their strategies to address trough-type connection and MSA issues. However, several IX WG participants felt that the EDCs' proposed strategies did not fully address what was being asked in the Orders. Accordingly, following the March 4<sup>th</sup> meeting, Great Plains Institute (GPI) staff met several times with IX WG participants (EDCs and other parties interested in trough-type connections and MSAs) interested in solutions to the trough-type connection issues (Ion Solar Pros) to continue working towards solutions.

This section provides context regarding the trough-type connections and MSA discussions during and following the March 4, 2024 IX WG meeting and lists any filing timeline changes that occurred during the March and April time period. The subsequent section ("April 9, 2024 Subgroup Meeting Summary") contains notes from the April 9, 2024 IX WG subgroup meeting dedicated to those two topics. The notes include an overview of the updated solutions that the EDCs put forth at the April IX WG subgroup meeting, which were informed by additional conversations between interested parties following the March IX WG meeting.

### **Trough-type connections**

Order 28 in PURA's [November 1, 2023 Decision](#) in Docket No. 23-08-08, *Annual Residential Renewable Energy Solutions Program Review – Year 3 (RRES)* established that the EDCs must develop and submit a trough-type connection plan that fulfills the following requirements.

- Alleviates potential safety or tampering risks associated with trough-type connections with side-by-side meter installations.

- Documents implementation costs and timelines for allowing trough-type connections for RRES installations.
- Is informed by research on approaches taken in other jurisdictions to alleviate these issues at multifamily housing sites.
- Is developed in consultation with the IX WG.

During the March 4<sup>th</sup> meeting the EDCs proposed a preliminary trough-type connection plan, but IX WG participants (Ion Solar Pros) expressed concern about the physical and financial viability of the EDCs' proposed solution. GPI met extensively with Ion Solar Pros and the EDCs following the March 4<sup>th</sup> IX WG meeting to ensure that both groups were able to better understand one another's concerns and recommended solutions. EDC representatives also separately met with representatives from Verogy and CONNSSA.

Order 28 in PURA's November 1<sup>st</sup> Decision established that the plan should be submitted to PURA no later than March 15, 2024 for review and approval. However, on March 12<sup>th</sup>, the EDCs filed a [Joint Motion for Extension of Time](#) for the filing. In a March 15<sup>th</sup> Ruling in response to that motion, PURA [granted](#) the EDCs' request. **This extended the filing deadline for the EDCs' trough-type connection plans to April 15, 2024**, allowing time for the EDCs to revise their approach in response to the concerns identified by Ion Solar Pros and other parties.

On April 15, 2024, the EDCs jointly submitted their trough-type connection plan in Docket No. 23-08-02. The plan incorporates aspects from IX WG discussions and separate discussions and correspondence with Ion Solar Pros and other interested parties and is [available here](#) for review.

On May 14, 2024, PURA [issued a Ruling](#) in response to the EDCs' filing. The Ruling established that PURA would make a final decision regarding the allowance of trough-type connections in the *RRES – Year 4* Docket (24-08-02) and invited parties interested in this topic to submit comments in that docket.

## MSAs

Order 32 in PURA's [November 1, 2023 Decision](#) in the *RRES – Year 3* Docket (23-08-08), established that the EDCs must develop and submit a filing documenting a proposed MSA strategy in accordance with the following requirements.

- Summarizes all safety concerns as well as solutions to each concern
- Provides estimated costs and timelines associated with implementation of each solution
- Is developed in collaboration with ConnectDER and Tesla to help the EDCs understand approaches to MSAs that have been taken in other jurisdictions.
- Is presented to the IX WG, with the opportunity for written feedback from participants.

During the March 4<sup>th</sup> meeting the EDCs proposed a preliminary MSA strategy, but ConnectDER and Tesla did not consider the EDCs' strategy to be a realistic or viable path towards allowing the use of MSAs in Connecticut. GPI met extensively with ConnectDER, Tesla, and the EDCs following the March 4<sup>th</sup> IX WG meeting to ensure that the involved parties understood each group's respective concerns.

Order 32 in PURA's November 1<sup>st</sup> Decision established that the MSA filing should be submitted to PURA no later than April 10, 2024. However, on April 5<sup>th</sup>, the EDCs filed a [Joint Motion for Extension of Time](#) in which they requested a May 10<sup>th</sup> filing deadline. In response to the EDCs' request, Tesla and ConnectDER submitted a [counterproposal](#) in which they requested that the MSA strategy be due on May 1<sup>st</sup> and that PURA establish a September 1<sup>st</sup> MSA implementation date. On April 10<sup>th</sup>, PURA [issued a motion](#) granting the EDCs' extension request, **thus extending the MSA strategy filing deadline to May 10<sup>th</sup>**. In their motion, PURA also established that they will review and evaluate the EDCs' MSA filings in the *RRES – Year 4* docket (24-08-02). Both utilities submitted their compliance filings on May 10<sup>th</sup>.

- [Link](#) to Eversource's compliance filing materials
- [Link](#) to UI's compliance filing materials

## April 9, 2024 Subgroup Meeting Summary

Because of the continued conversation regarding trough-type connections and MSAs following the March 4, 2024 IX WG meeting, we determined that the MSA and trough-type connection discussions warranted focused discussion via a dedicated subgroup. For this reason, we structured the April 9, 2024 IX WG meeting as an optional subgroup meeting dedicated to these two topics. Any IX WG member was welcome to attend, but those with special interest in the EDCs' trough-type connection filings or MSA filings were strongly encouraged to attend to help further inform the EDCs' plans through continued discussion.

## Meeting Introduction

GPI began the meeting by reviewing the meeting ground rules and the agenda for the April IX WG subgroup meeting. GPI then provided an overview of the following upcoming items:

### Deadlines requiring IX WG action, as established in various PURA Orders:

- [11/8 Decision](#) in 23-08-03 (NRES), Order 28: "...no later than June 1, 2024, the EDCs shall present the updated timeline and cost estimates of their proposed [hosting capacity map] upgrades to a meeting of the [IX WG]."
- [11/29 Decision](#) in 23-08-05 (Energy Storage Solutions), Order 28: "No later than August 1, 2024, the EDCs shall review energy storage interconnection practices currently used in other jurisdictions... The EDCs shall also present their findings to the IX WG before filing them with the Authority."
- [12/20 Decision](#) in 22-06-29/22-06-29RE (Cost Allocation), Order 3: "...The Authority directs the EDCs, in coordination with the [IX WG], to develop a proposed adder for applications received on and after January 1, 2025, and to submit it for review and approval... on or before August 1, 2024."

### Topics to be covered at May IX WG meeting:

- Presentation from Mike Porcaro, Chair of the Massachusetts Technical Standards Review Group and Director of Innovative Grid Solutions & Distributed Generation at National Grid
- EDCs to present the results of the RFP process for their hosting capacity map upgrades, as required by PURA's [11/8 Decision](#) in Docket No. 23-08-03 (NRES) (Order 28).

## Presentation, Discussion, and Q&A: Trough-type connections

### Presenter: Patrick Fam, Eversource

1. Patrick Fam (Eversource) provided an overview of several trough alternatives that the EDCs would propose. These alternatives would apply to multi-family homes with the following specifications:
  - a. 120/240V single-phase services  $\leq 400A$
  - b. Groups of 6 or fewer meters
2. Modular Metering that meets the following specifications remains the EDCs' preferred installation approach:
  - a. For overhead and underground services
  - b. Must meet EDC guidebook standards
  - c. Fusing must not exceed rating of service from utility
  - d. Remains an option despite supply chain issues—installers with access to multi-gang meter sockets still encouraged to use this approach
3. Trough Alternative 1: Second Riser
  - a. Currently allowed in UI territory, would be new in Eversource territory
    - i. Eversource proposes allowing for one year.
    - ii. Will re-evaluate at end of year if supply chain conditions/lead times for multi-position meter sockets improves
    - iii. UI does not have plan to re-evaluation—would continue to be allowed
  - b. Can be implemented immediately
  - c. *Aileen Cole, GPI*: Regarding Eversource's 1-year implementation timeline, does that mean the second riser approach can be implemented for the next 12 months, or through the end of this calendar year?
    - i. *Patrick Fam, Eversource*: With the current timeline and approach, they can be used through this calendar year and will reassess in January 2025. By that point, Eversource's preferred installation configuration (modular metering boxes/multi-gang meters) may be more readily available to developers. But if the supply chain remains challenging, Eversource can consider extending the allowance for the second riser configuration. Between now and January 2025, Eversource plans to continue working with installers, meter socket manufacturers, etc. to better understand equipment lead times.
4. Trough Alternative 2: Fused Disconnect
  - a. For overhead or underground services
  - b. Meter sockets must meet EDC guidebook standards
  - c. Fusing must not exceed rating of service from utility
  - d. Lockable in the "off" position
  - e. Arc flash label indicating nominal voltage and arc rating in cal/cm<sup>2</sup> (a standard unit of measurement for arc flash ratings)
5. Trough Alternative 3: Bussed Tap/Junction Box
  - a. For overhead or underground services, but can only be used on services fed from overhead transformers

- b. Meter sockets must meet EDC guidebook standards
  - c. Tap box must be lockable/sealable
  - d. Arc flash label indicating nominal voltage and arc rating in cal/cm<sup>2</sup>
  - e. Each service should be terminated, shouldn't be any splicing or lugs in this compartment – safer and easier to work on
  - f. Requires PURA review/approval before it can be implemented
6. Trough Alternative 4: Bussed Tap Box
- a. EDCs would authorize use of a bussed tap box
  - b. Rather than specifying a list of manufacturers, EDCs will outline requirements that the tap boxes must meet—this makes things easier given supply chain issues. Requirements to be met:
    - i. NEMA 3R minimum
    - ii. Box and lug terminals must be UL-listed
    - iii. Ability to lock and seal cover
  - c. More specific requirements for ES underground conductors
  - d. Requires PURA review/approval before it can be implemented
7. Continuing conversations with developers as the EDCs work to refine these alternatives for multi-family configurations.
8. EDCs will eventually prepare guidance documents to post on their websites.

## Presentation, Discussion, and Q&A: MSAs

### Presenter: Joe Marinaccio, UI

1. Eversource and UI plan to allow MSAs under the following conditions:
  - a. Device is owned and maintained by customer
  - b. Maximum 120/240V, with 200A only
  - c. Written permission received from local Authority Having Jurisdiction (AHJ)
  - d. Specific MSA device has been reviewed and approved by EDC
  - e. Meter socket is located outside, ringless, and is in good condition
  - f. Customer signs liability waiver
2. MSAs will **not** be allowed in the following conditions:
  - a. No written permission from local AHJ
  - b. Two or more ganged meter packs
  - c. Ring-type sockets
  - d. Services greater 120/240V, and above 200A
  - e. Indoor meters
  - f. Meters in poor condition/showing signs of deterioration
3. Items that the EDCs still need to explore/evaluate before developing final plan/solution:
  - a. Develop and provide MSA implementation cost analysis
    - i. Includes identification of additional costs necessary for conducting power quality checks when MSAs are installed (i.e., pole-mounted voltage recorders vs. meter socket-mounted voltage recorders)
  - b. Minor updates to DER application
    - i. PowerClerk

- ii. Billing/customer information system
  - c. Discuss approach with CT State Building Inspector
    - i. Have been having difficulty reaching a contact at the Office of the State Building Inspector
    - ii. ConnectDER and Tesla to provide training for municipal building inspectors and developers, who will be interacting with these devices in the field. EDCs may ask for support from ConnectDER and Tesla for internal staff training, but still figuring out aspects of this.
    - iii. *Comment from Jon Knauer, ConnectDER:* Ensuring that inspectors, electricians, and any non-utility personnel who may encounter the MSA understand the device, what it is, and what it does is standard procedure in other markets.
    - iv. *Jordan Graham, Tesla:* Will need to look at the EDCs' proposed approaches in greater detail and discuss scalability and workability with the strategies with their operations and business teams, but seems reasonable.
    - v. *Question from EDCs to EOE:* Would EOE be able to help connect us with someone at the Office? Have reached out in the past, but have not yet gotten a response.
    - vi. *EOE:* Yes, EOE will do some outreach to help support this.
  - d. Establish customer communications strategy
    - i. Need to inform customers exchanging a meter for an MSA will involve an outage requiring operation of the main breaker
  - e. Develop liability waiver
  - f. Develop training for EDC employees
4. UI is open to an MSA pilot phase, but Eversource needs to better understand operational issues first
  5. *Jordan Graham, Tesla:* Concerned about the requirement to obtain written permission from the AHJ—this is not typical in other jurisdictions and introduces additional bureaucracy/red tape, which can make deployment at scale more difficult.
    - a. *Patrick Fam, Eversource:* In CT, the standard solar installation process involves the developer submitting a permit to the AHJ for approval. The “written permission” that the EDCs are referring to simply involves giving the AHJ the opportunity to reject or approve the MSA through the standard permitting process.
    - b. Tesla ok with this
  6. *Jordan Graham, Tesla:* Also concerned about the ringed (MSAs not allowed) vs. ringless (MSAs allowed) socket requirements. How many of each are in CT?
    - a. *Patrick Fam, Eversource:* Because Eversource has mandated ringless sockets for 20+ years, any existing ringed sockets are typically old and in poor condition. However, most socket covers are ringless.
    - b. Tesla will need to look into this more internally.

7. *Val Stori, GPI*: Could the EDCs provide clarification on the power quality measurement requirements that are a significant reason for the EDCs having requested the filing extension?
  - a. *Patrick Fam, Eversource*: When power issues arise, they require rapid response. Eversource currently has a power quality reader installed within the meter socket for identifying such issues. Could use pole-top recorders but need resources to install them and need to better understand their cost (equipment costs, personnel costs, etc.) to be able to include that in the filing.
8. *Val Stori, GPI*: Could the EDCs provide additional details regarding the liability waiver (e.g., What does it involve? Who would be signing it, and for what?)
  - a. *Patrick Fam, Eversource*: Still figuring out details with legal team—other utilities have similar liability approaches regarding damage to the MSA.
    - i. *Jordan Graham, Tesla*: Note that this liability waiver approach is an exception to the norm practiced elsewhere, not the rule—the majority of other utilities that allow MSAs do not require these waivers. Tesla is not necessarily opposed to implementing a similar approach in CT to what some utilities have implemented elsewhere, but still have timeline concerns. Many utilities have developed these processes and implemented them quickly.
  - b. *Joe Marinaccio, UI*: Are Tesla or ConnectDER aware of pilot programs implemented in other jurisdictions?
    - i. *Jordan Graham, Tesla*: Pilots were more common when MSAs were brand new—generally no longer support them, though did recently in CA due to a more aggressive deployment (hundreds being installed weekly).
  - c. *Jamie Spannhake, EOE*: Please provide more details regarding the liability waiver. Would it ask the home owner to waive liability for damage done to the MSA by the utility?
    - i. *Patrick Fam, Eversource*: Yes, but don't have many additional details beyond that.
9. EDCs are open to continuing to share resources regarding MSA implementation in other jurisdictions.
  - a. EDCs would like to meet again (via a dedicated call between EDCs, Tesla, and ConnectDER) in 2-3 weeks to give time to continue discussions regarding power quality issues with legal and engineering teams.